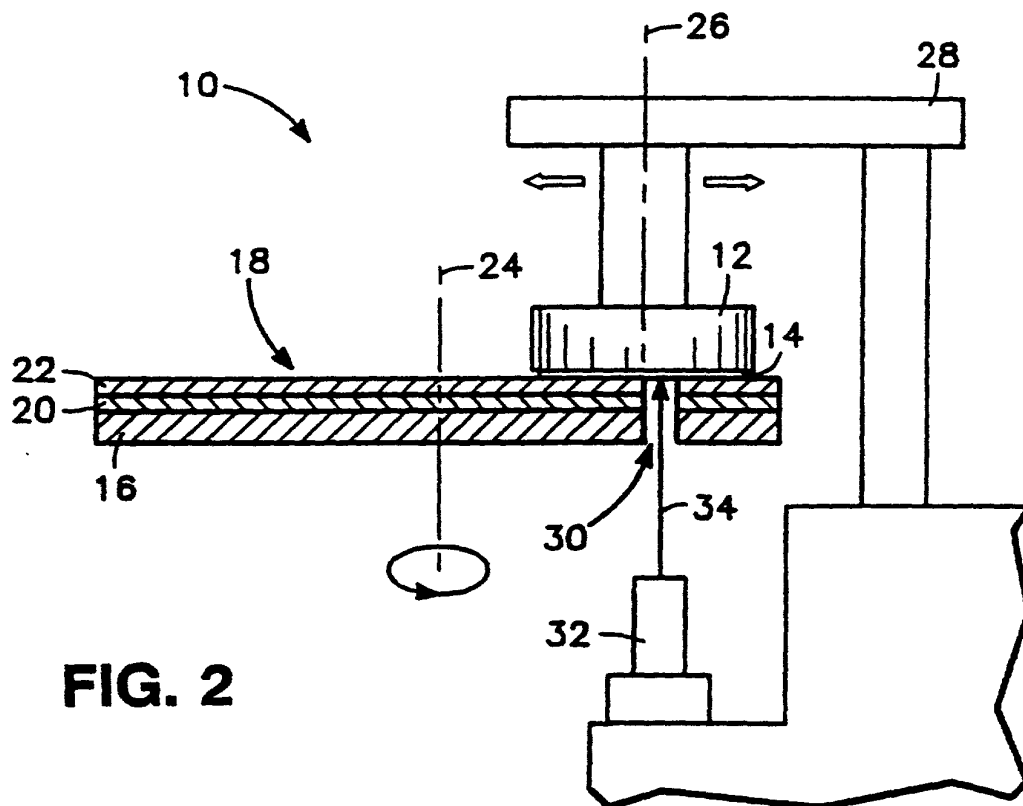
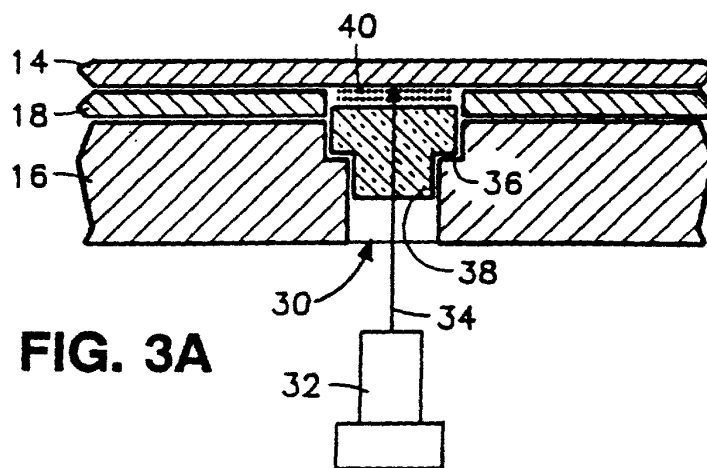


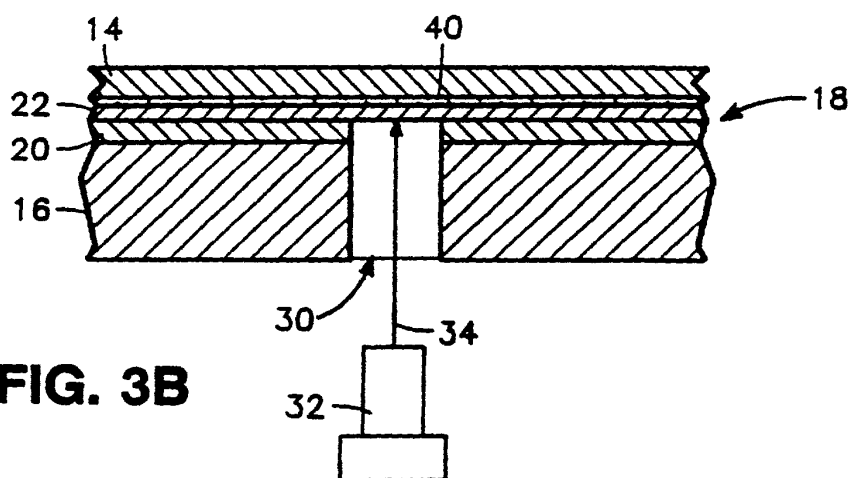
PRIOR ART  
**FIG. 1**



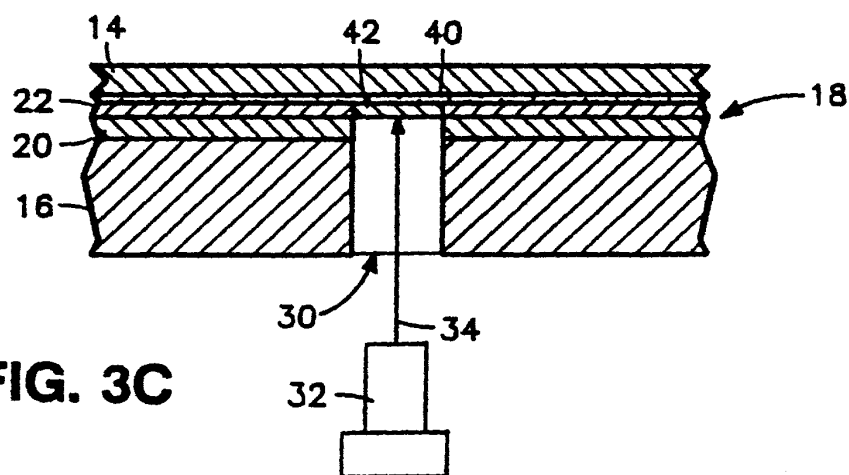
**FIG. 2**



**FIG. 3A**



**FIG. 3B**



**FIG. 3C**

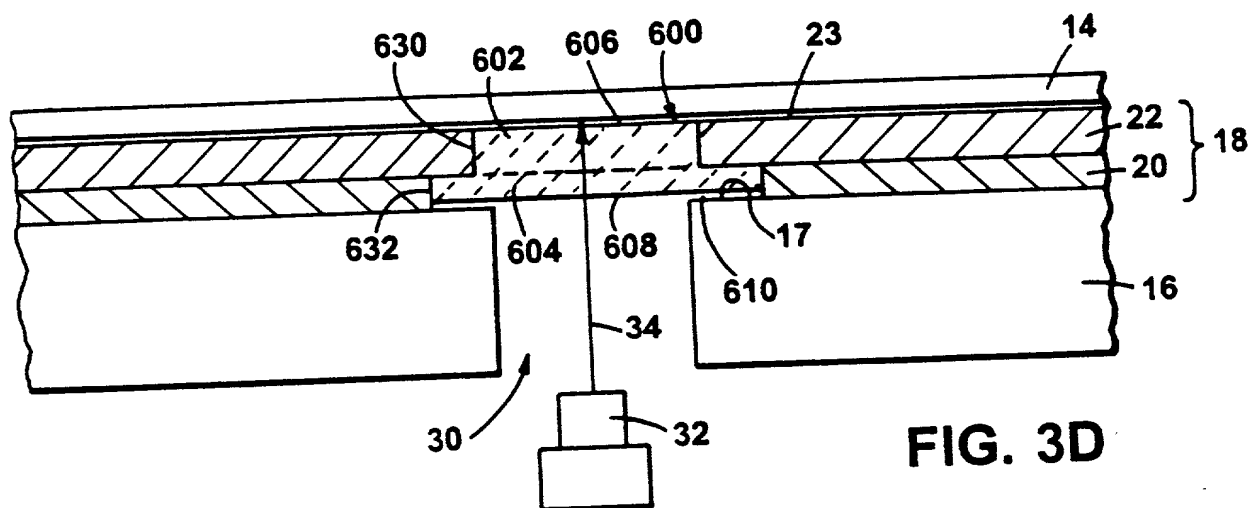


FIG. 3D

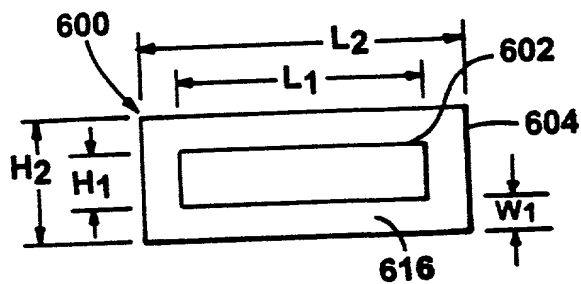


FIG. 3E

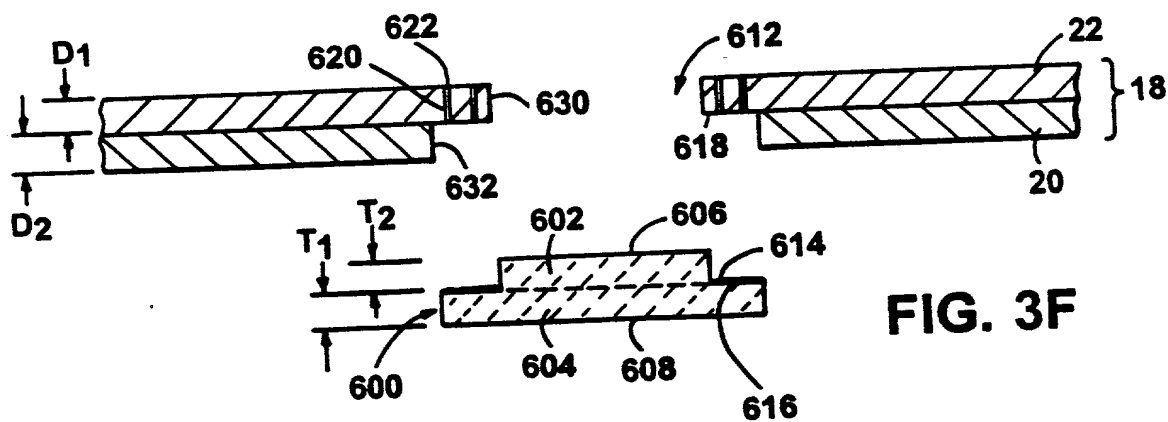
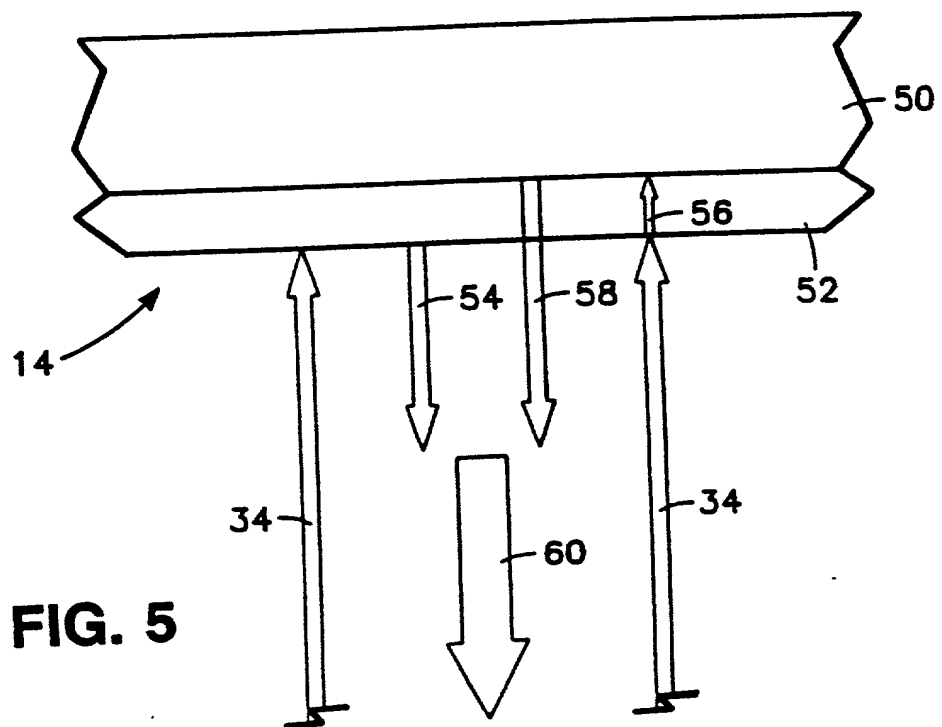
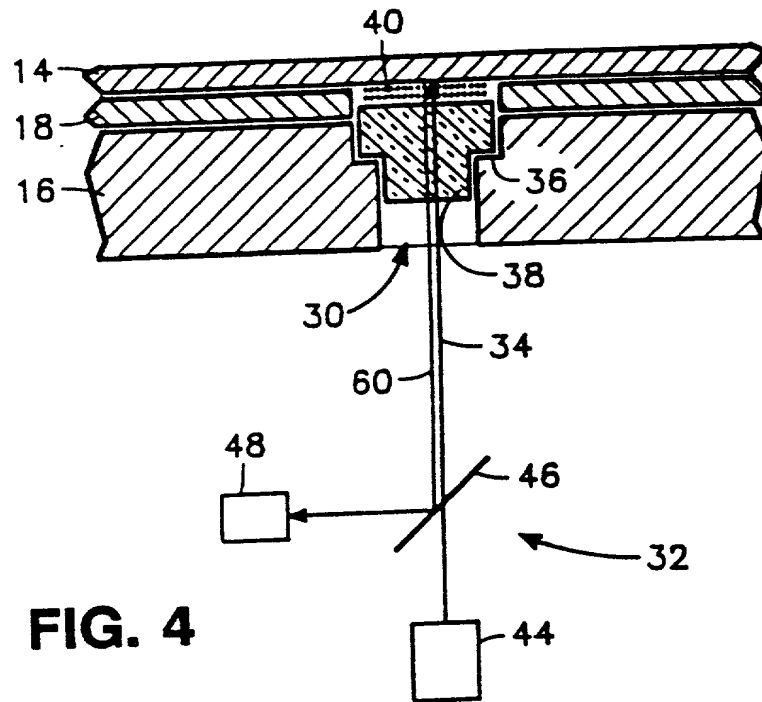
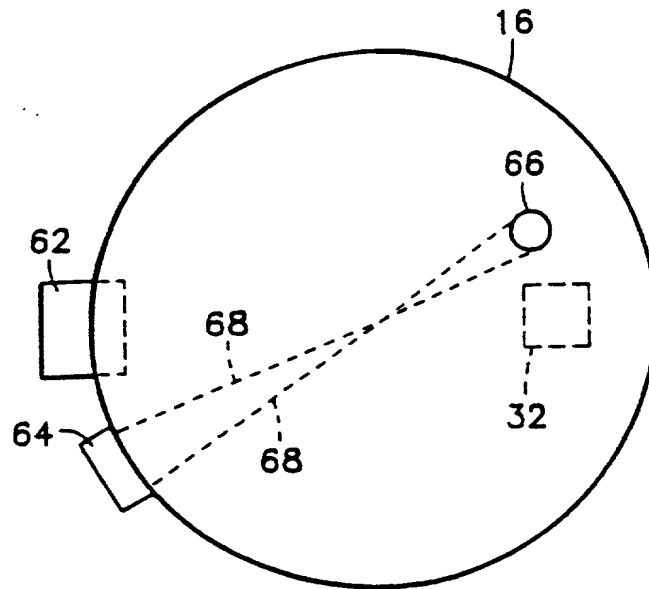
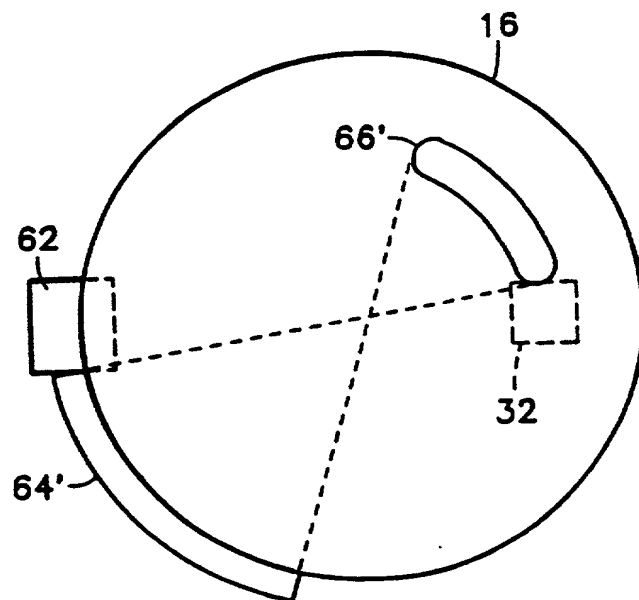


FIG. 3F





**FIG. 6**



**FIG. 7**

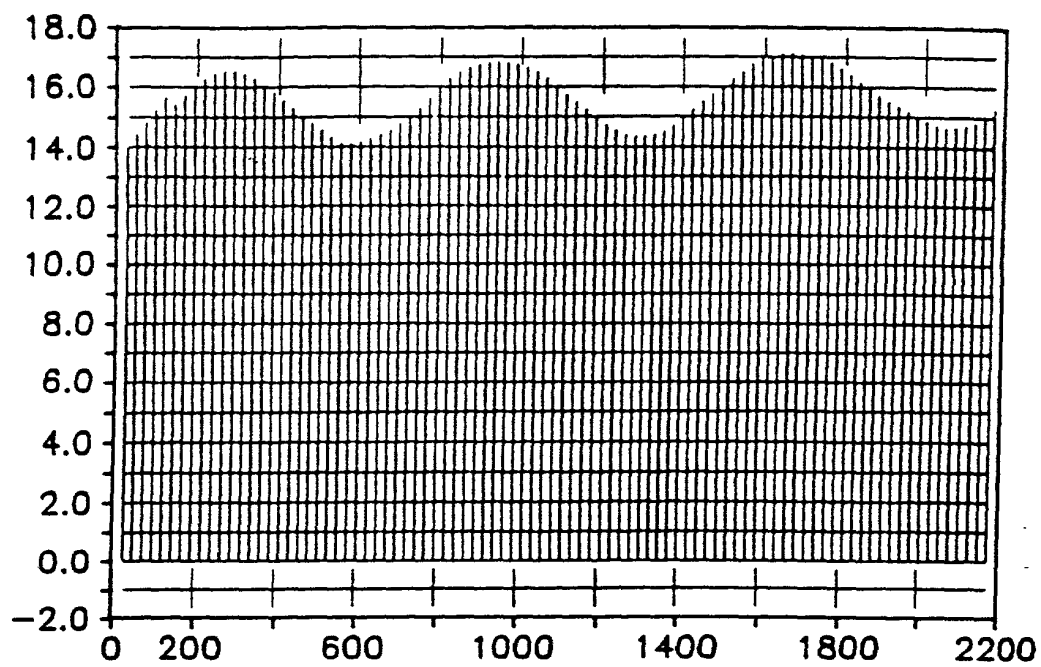
```

graph TD
    102[SAMPLE LASER INTEROMETER SIGNAL  
DURING AVAILABLE DATA ACQUISITION  
TIME DURING EACH PLATEN REVOLUTION] --> 104[INTEGRATE SAMPLED SIGNAL OVER  
DATA ACQUISITION TIME]
    104 --> 106[STORE INTEGRATED SAMPLED  
SIGNAL VALUES]
    106 --> 108[COMPUTE CUMULATIVE SAMPLE TIME  
IE; SUM DATA ACQUISITION TIME  
FOR EACH SAMPLED SIGNAL  
AFTER EACH PLATEN REVOLUTION]
    108 --> 110[COMPARE CUMULATIVE SAMPLE TIME  
TO DESIRED MINIMUM SAMPLE TIME]
    110 --> 112{DOES  
CUMULATIVE SAMPLE  
TIME EQUAL OR EXCEED  
DESIRED SAMPLE TIME  
?}
    112 -- NO --> 102
    112 -- YES --> 114[TRANSFER STORED INTEGRATED SAMPLED  
SIGNAL VALUES AND SUM]
    114 --> 116[OUTPUT SUMMED INTEGRATED  
SAMPLED SIGNAL VALUES]

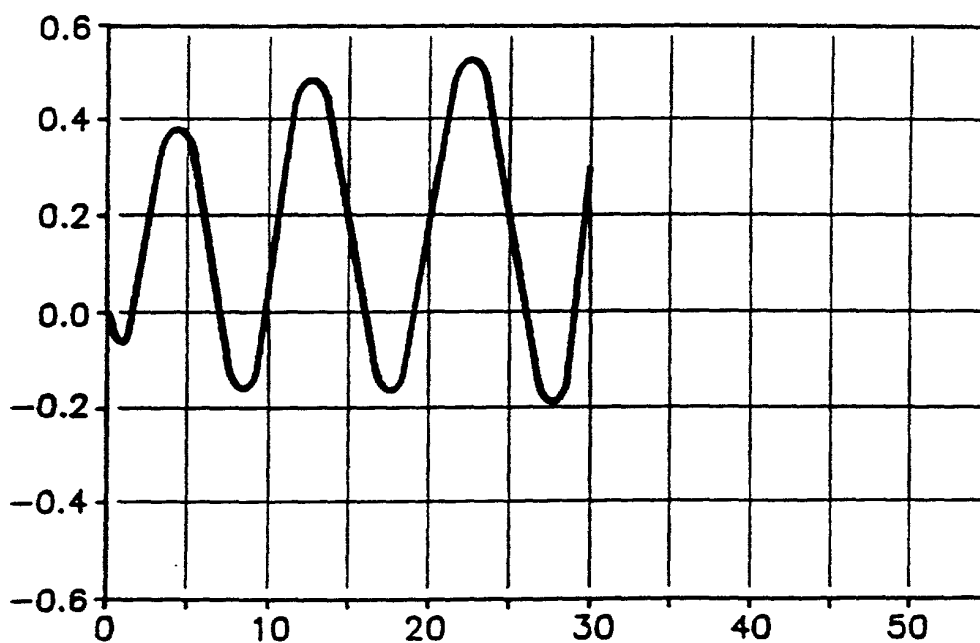
```

**FIG. 8**

**FIG. 8**



**FIG. 9A**



**FIG. 9B**

```

graph TD
    202[COUNT NUMBER OF CYCLES  
(OR PORTION THEREOF)  
IN THE DATA SIGNAL] --> 204[COMPUTE THICKNESS OF OXIDE LAYER REMOVED  
DURING ONE CYCLE (OR PORTION THEREOF)  
OF DATA SIGNAL  
IE;  $\lambda/2n$ ]
    204 --> 206[COMPARE THICKNESS OF OXIDE LAYER REMOVED  
TO THE DESIRED THICKNESS TO BE REMOVED  
IE; NUMBER OF CYCLES (OR PORTION THEREOF)  
x THICKNESS REMOVED DURING ONE CYCLE  
(OR PORTION THEREOF)]
    206 --> 208{DOES  
ACTUAL THICKNESS  
REMOVED EQUAL OR  
EXCEED THE DESIRED  
THICKNESS  
?}
    208 -- YES --> 208[TERMINATE CMP PROCESS]
    208 -- NO --> 202
  
```

**FIG. 10A**



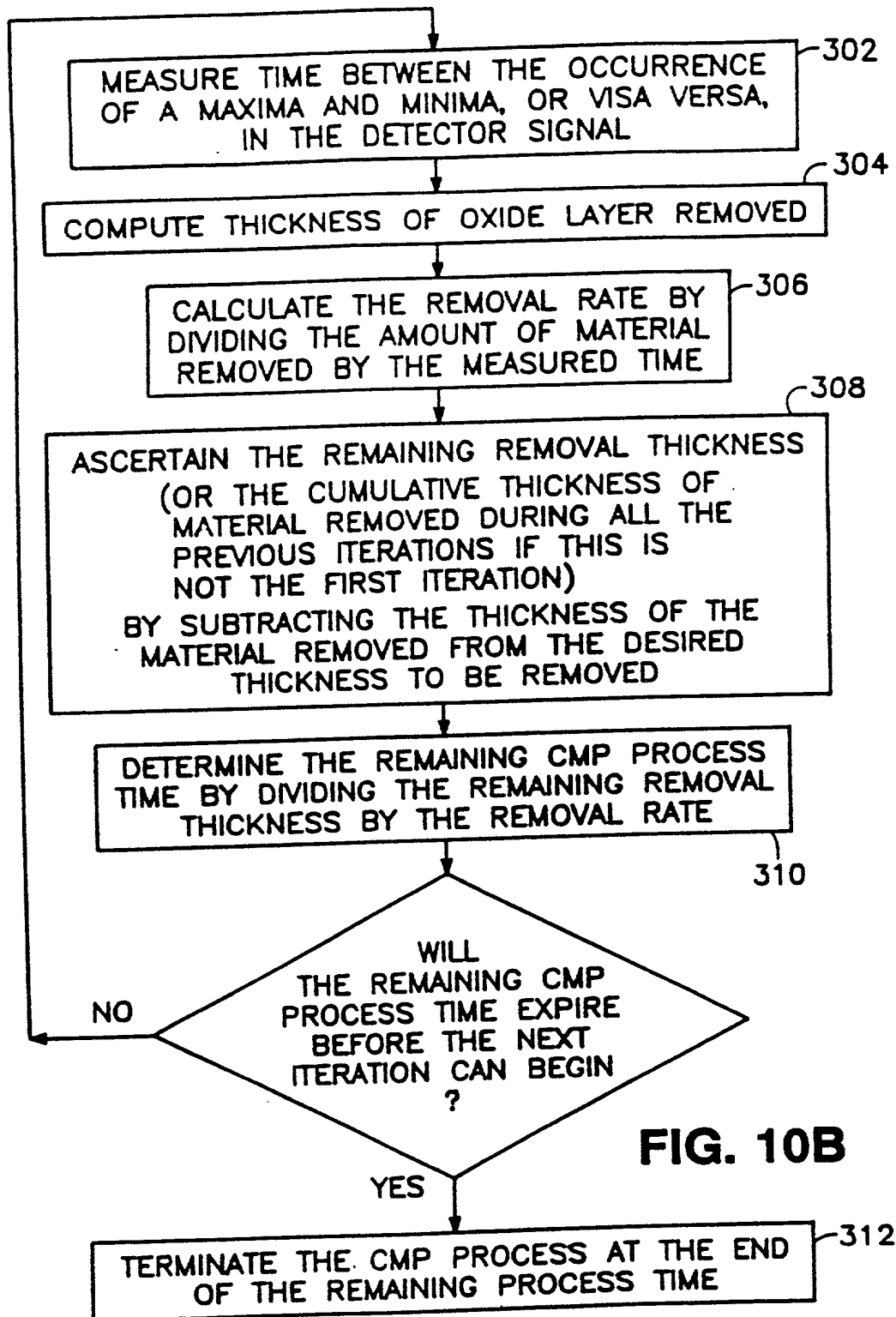
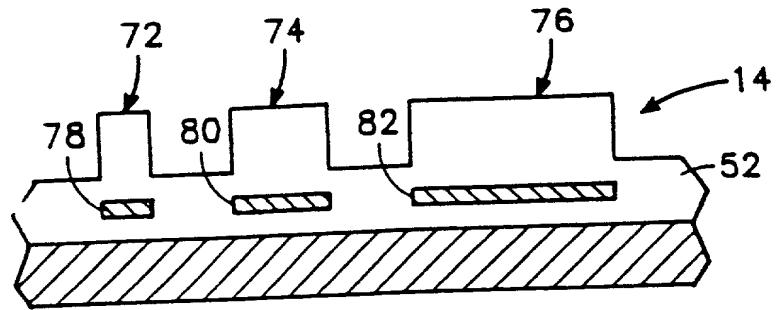
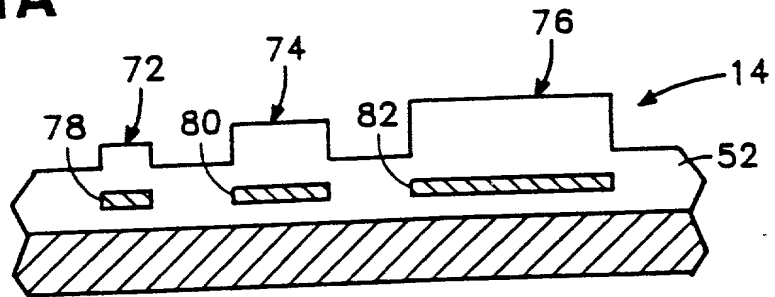


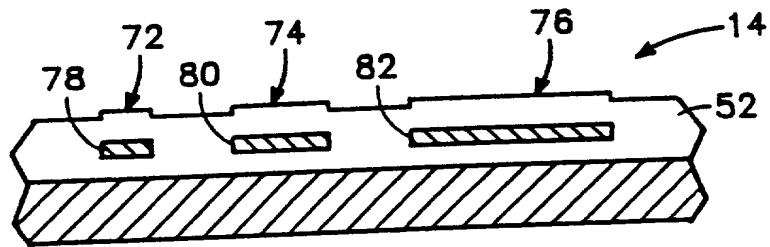
FIG. 10B



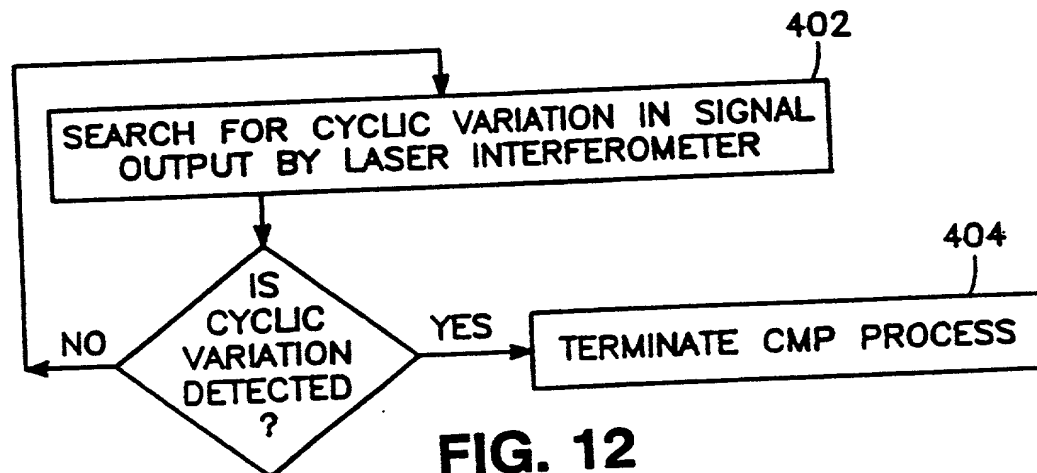
**FIG. 11A**



**FIG. 11B**



**FIG. 11C**



**FIG. 12**

**FIG. 13**

```

graph TD
    502[502 FILTER THE DETECTOR SIGNAL TO PASS ONLY THE COMPONENT HAVING THE PREDETERMINED FREQUENCY ASSOCIATED WITH THE STRUCTURE OF INTEREST] --> 504[504 MEASURE TIME BETWEEN THE OCCURRENCE OF A MAXIMA AND MINIMA, OR VISA VERSA, IN THE DETECTOR SIGNAL]
    504 --> 506[506 COMPUTE THICKNESS OF OXIDE LAYER REMOVED]
    506 --> 508[508 CALCULATE THE REMOVAL RATE BY DIVIDING THE AMOUNT OF MATERIAL REMOVED BY THE MEASURED TIME]
    508 --> 510[510 ASCERTAIN THE REMAINING REMOVAL THICKNESS (OR THE CUMULATIVE THICKNESS OF MATERIAL REMOVED DURING ALL THE PREVIOUS ITERATIONS IF THIS IS NOT THE FIRST ITERATION) BY SUBTRACTING THE THICKNESS OF THE MATERIAL REMOVED FROM THE DESIRED THICKNESS TO BE REMOVED]
    510 --> 512[512 DETERMINE THE REMAINING CMP PROCESS TIME BY DIVIDING THE REMAINING REMOVAL THICKNESS BY THE REMOVAL RATE]
    512 --> 514{514 WILL THE REMAINING CMP PROCESS TIME EXPIRE BEFORE THE NEXT ITERATION CAN BEGIN ?}
    514 -- NO --> 502
    514 -- YES --> 516[516 TERMINATE THE CMP PROCESS AT THE END OF THE REMAINING PROCESS TIME]
  
```

**FIG. 14**

FIG. 14

FIG. 15A

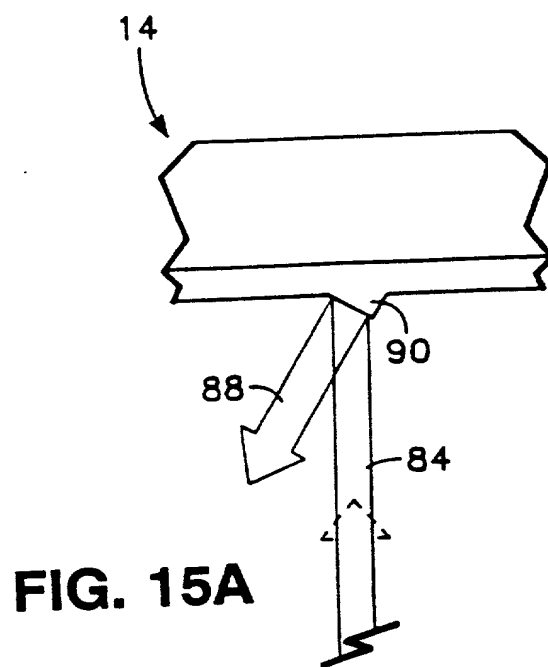


FIG. 15A

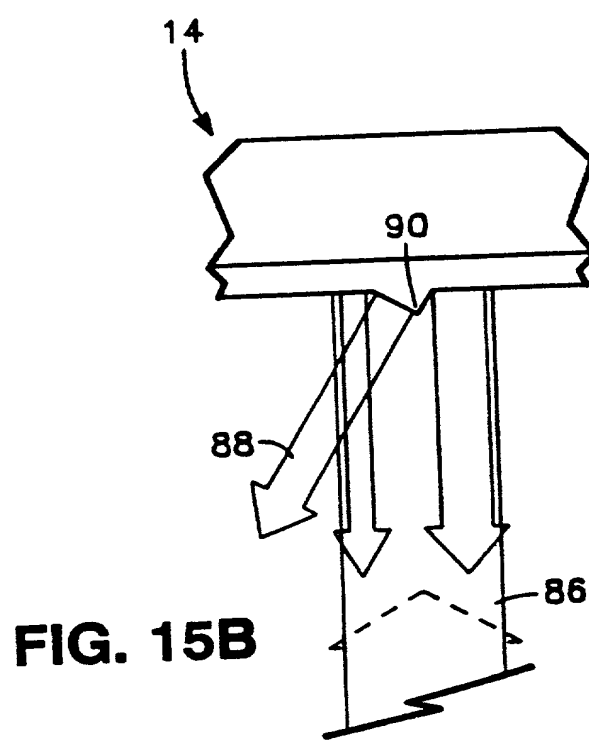


FIG. 15B

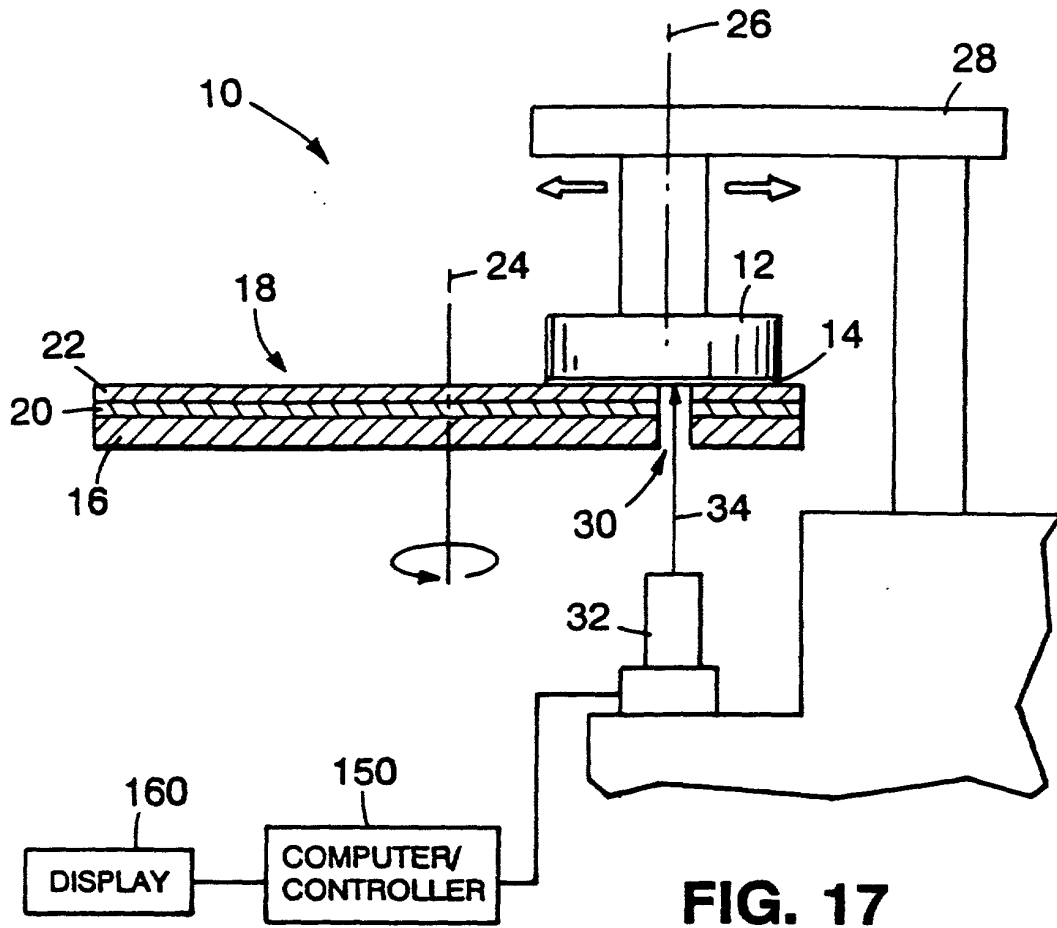


FIG. 17

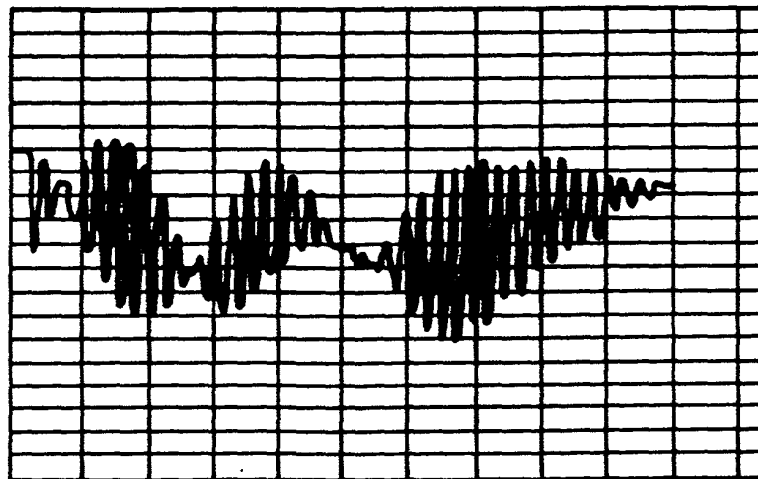


FIG. 16

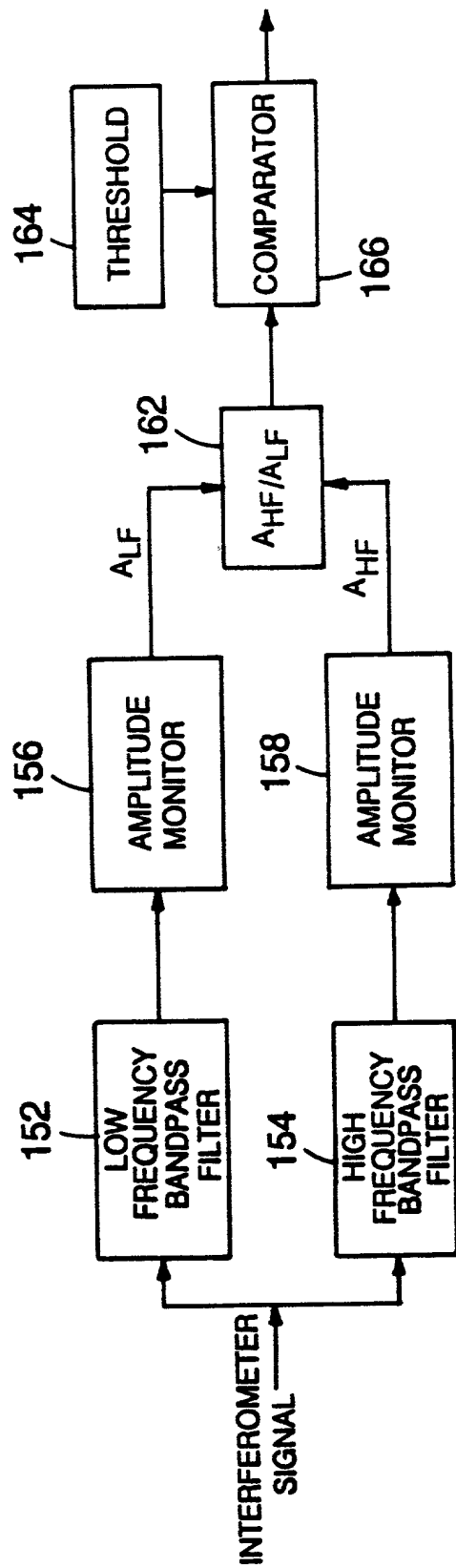
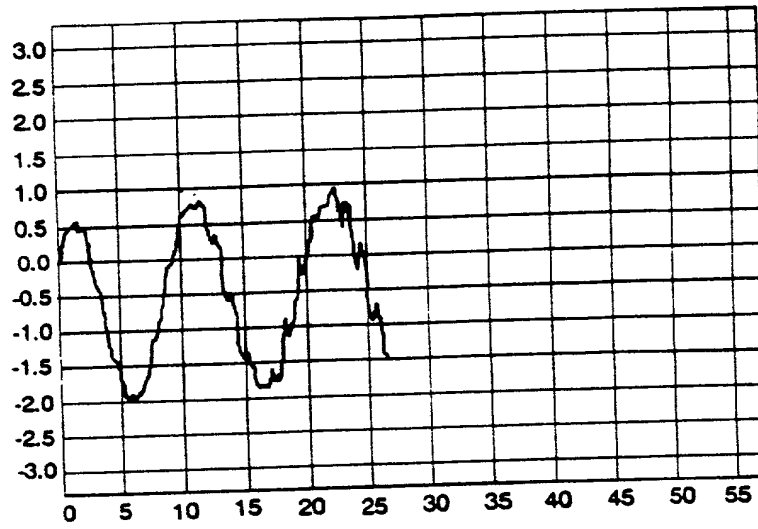
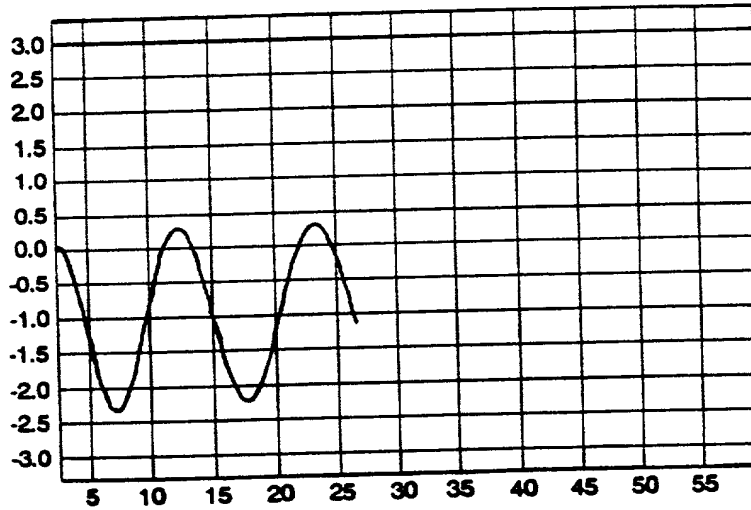


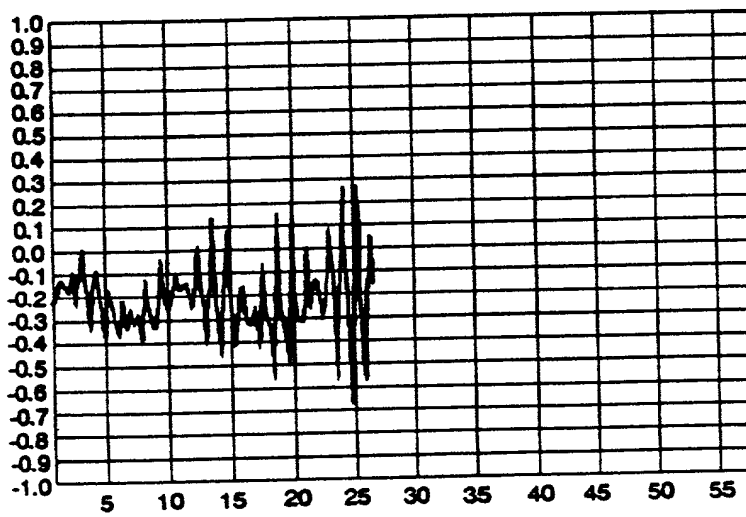
FIG. 18



**FIG. 19A**



**FIG. 19B**



**FIG. 19C**



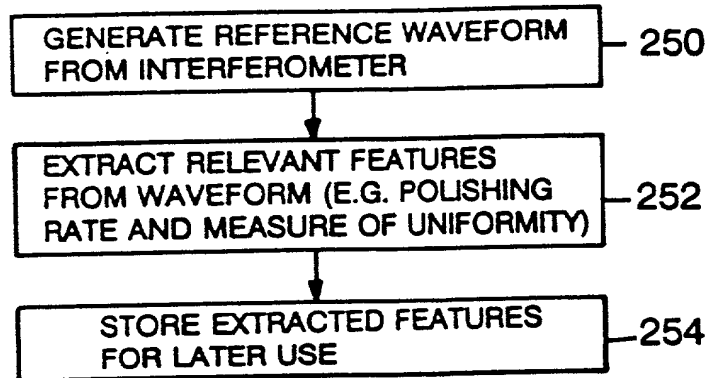


FIG. 20A

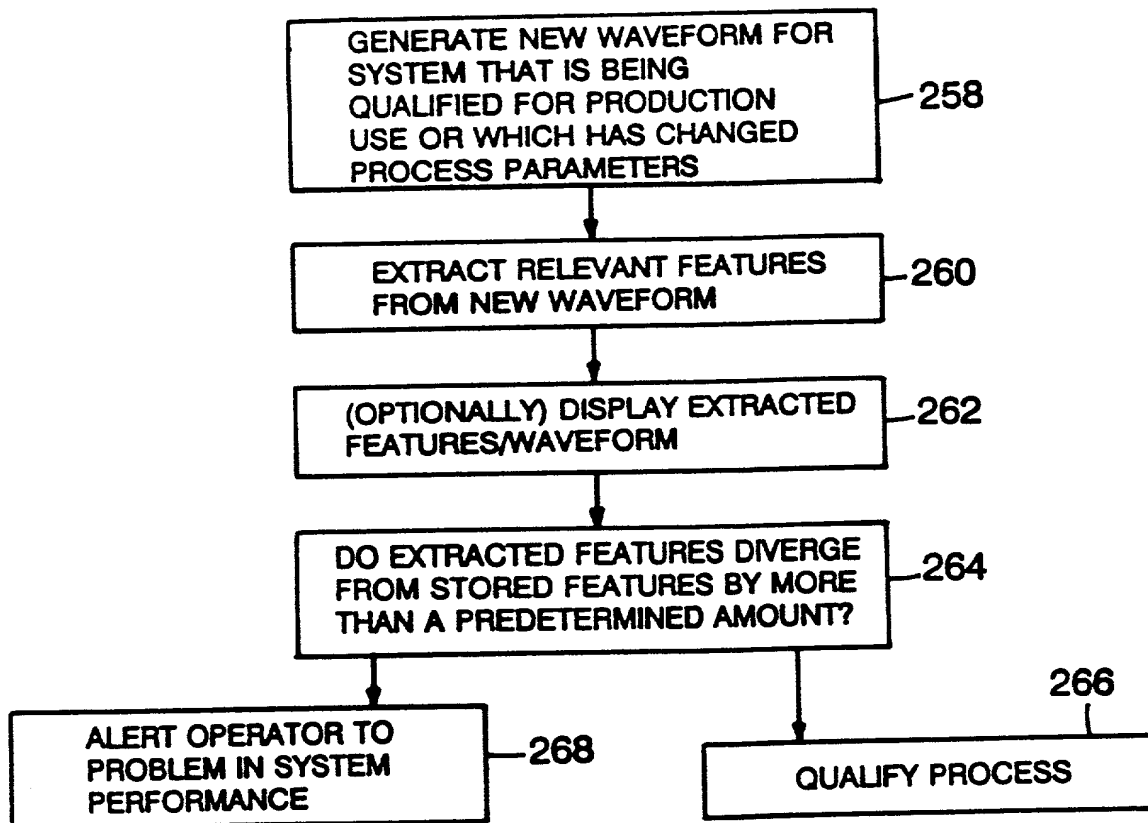
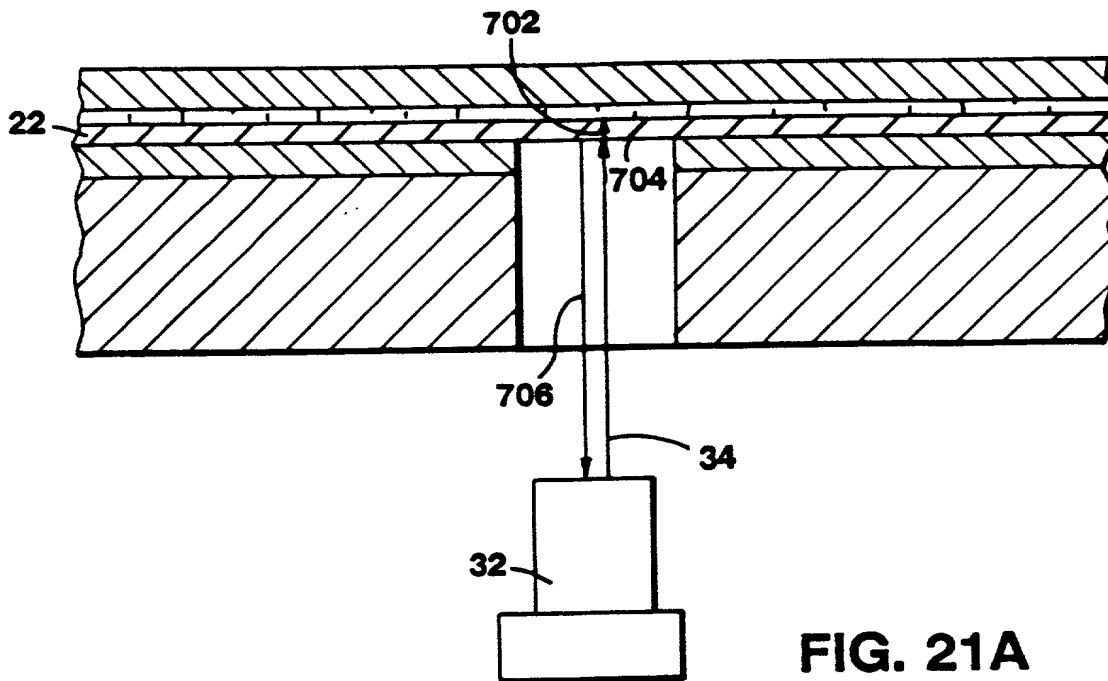
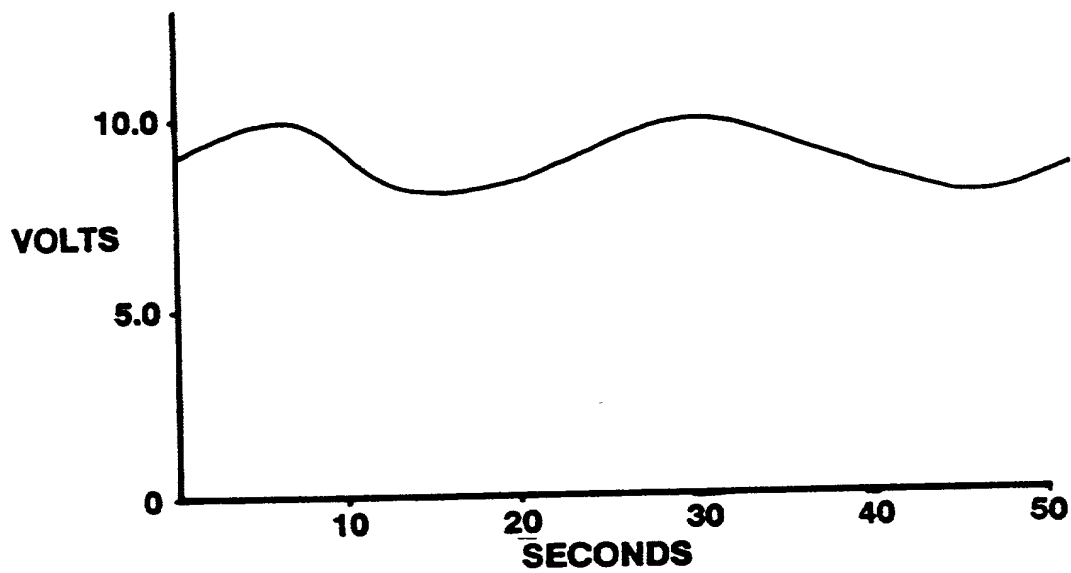


FIG. 20B



**FIG. 21A**



**FIG. 21B**

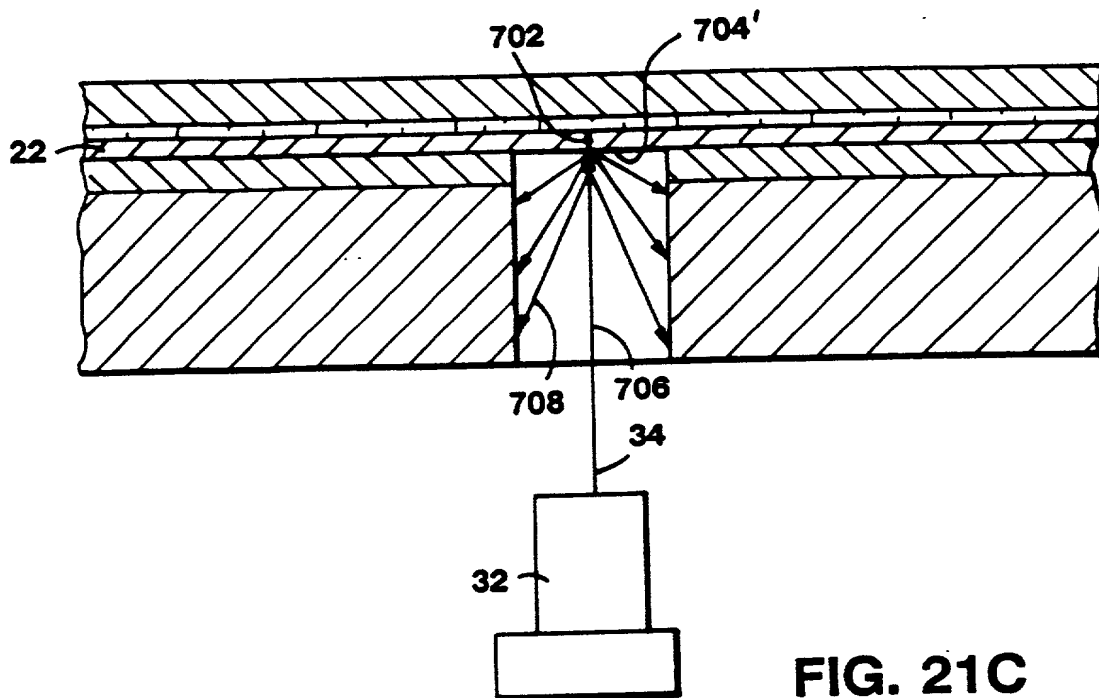


FIG. 21C

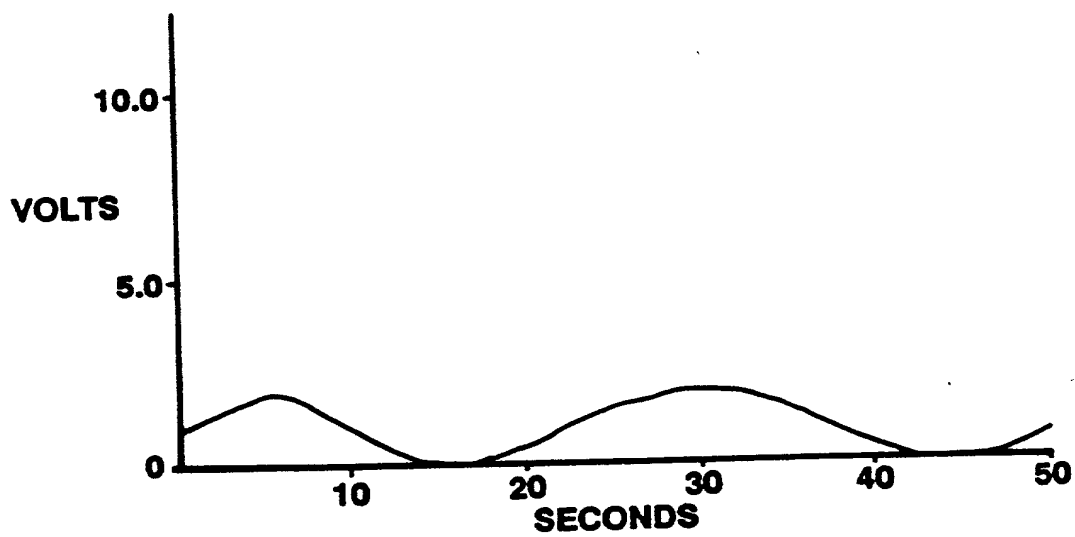


FIG. 21D